

Koalas In Tea-tree

BY KEELY OUGH*, K. A. HANDASYDE*, R. W. MARTIN*, AND A. K. LEE*

Although emphasis has been placed upon the dietary dependence of the koala, *Phascolarctos cinereus*, on the foliage of certain species of *Eucalyptus*, it has occasionally been observed to feed on foliage from other genera. For example, koalas have been observed feeding on native kapok (*Bombax malabrica*; Degabriele 1973), pink box (*Tristania conferta*), and swamp box (*Tristania suaveolens*; Pearce and Eberhard 1978), and monterey pine (*Pinus radiata*; Lithgow 1982). Here we describe some observations which clarify the contribution that foliage from other genera may make to the diet.

In November 1986, we captured six adult female koalas in manna gum (*E. viminalis*) on French Island and released them in a woodland of the same species at the northern end of nearby Chinaman Island. Within a week all animals had dispersed from the release site and two weeks after release, four of the animals were found in thickets of coastal tea-tree (*Leptospermum leavigatum*) or swamp paperbark (*Melaleuca ericifolia*) towards the centre and south end of the island. On subsequent visits to the island the koalas were found in either coastal tea-tree, swamp paperbark or manna gum (Table 1). None of the animals was consistently found in a single species, although female R/B occurred on all but two occasions in coastal tea-tree. Some of these animals settled towards the southern end of the island where the vegetation comprised an old aged stand of coastal tea-tree through which were scattered a few manna gums. This stand was separated from the shore by a narrow stand of swamp paperbark.

Superficial inspection of faecal pellets from these animals suggested that all were feeding on coastal tea-tree or paperbark, as well as manna gum. We collected faecal!

pellets from the animals, or from the ground beneath the tree they occupied, on four separate occasions at roughly weekly intervals between February 18 and March 25, 1987. Whenever possible we examined five pellets for each koala on each occasion. Faecal pellets were broken apart by lightly crushing in water with mortar and pestle, then bleached in sodium hypochlorite ("White King") for 4-6 h, washed in water and stained with gentian violet. Subsamples mounted in 60 percent corn syrup (Karo) were examined under 40X magnification and the cuticle fragments identified. Reference cuticles were prepared from fresh leaves by the method described above, and also by digesting pieces of leaf in hot concentrated nitric acid until only cuticles remained. Frequencies of the different plant species were not quantified, but often fragments attributable to one species were predominant and this was noted.

Table 1: Tree Use by Koalas Released on Chinaman Island (E = *Eucalyptus viminalis*, Ex = *Exocarpos*, L = *Leptospermum laevigatum*, M = *Melaleuca ericifolia*, Mn = Mangrove)

Dates	KOALAS						
	R/L	R/G	R/P	R/R	R/B	R/Y	
19.11.86	E	E	E	E	E	E	
26.11.86	E	E	E	Ex		E	
3.12.86	M	E	E	M	L	L	
10.12.86	F	E	M	E		E	
18.12.86	L	E	M	L	L	Ex	
24.12.86	L	E	E	L	L	E	
31.12.86	M	E	M	M	L	M	
7.01.87	L	E	E	L	L	E	
14.01.87	L	E			L	M	
22.01.87	M	E	E	L	L	M	
28.01.87	M	L	M	L	L	M	
4.02.87	L	E	E	M	F	L	
11.02.87	M	E	E	E	L	E	
18.02.87	M	L	M	L	L	L	
25.02.87	E	E	E	E	L	M	
4.03.87	M	M	M	L	L	E	
11.03.87	E	E				E	
25.03.87	Mn	E	E	L	L	E	
% OCCURRENCE IN							
<i>E. viminalis</i>	28	83	63	25	13	50	
<i>L. laevigatum</i>	28	11	37	50	87	17	
<i>M. ericifolia</i>	39	6	0	19	0	28	

* Department of Zoology, Monash University, Clayton, Victoria, 3168.

Table 2: Composition of Faecal Pellets of Koalas on Chinaman Island

Symbols as in Table 1. "E>M" for example, represents a pellet composition of at least 75% eucalypt and less than 25% *Melaleuca*; and "E=L" a proportional representation between 75:25 and 25:75.

Dates	KOALA					
	R/I	R/G	R/P	R/R	R/B	R/Y
18.02.87	E>M	E>L>M	E>M	E=L>M	E=L	E=L
25.02.87	E>M	E>M	E	F>L	E=L	
4.03.87	E	E=L>M	E	L>E	E=L	E
25.03.87	E	E>L	E	E=L	E>L	E>L

All faecal pellets examined (N=101) contained fragments of manna gum (Table 2), and in many instances this was the only species detected (38 percent of samples), or predominant species (27 percent). Coastal tea-tree was detected in 52 percent of the pellets, was predominant in 4 percent of the pellets, and occurred in roughly equal proportions with manna gum in another 31 percent of samples. Swamp paperbark was detected in 15 percent of samples, but was never predominant. These and other observations of the diet of koalas (eg. Hindell and Lee, 1988) suggest that koalas are less fastidious in their choice of food species than previously thought. Nevertheless they

confirm that, within a geographic region, the foliage of one or two species of *Eucalyptus* are predominant and consistent components of the diet.

REFERENCES

Degabriele, R. (1973). Koalas thrive in a tropical haven. *Habitat* 1:8-11.
 Hindell, M.A., and A.K. Lee (1988). Habitat use and tree preferences of koalas in mixed eucalypt forest. *Aust. Wild. Res. (in press)*.
 Lithgow, K.A., (1982). Koala feeding on Monterey pine. *Viet. Nat.* 99:259.
 Pearse, R.J., and I.H. Eberhard (1978). Conservation of koalas. pp.213-222 in *The Koala, Proceedings of the Taronga Symposium on Koala Biology, Management and Medicine*. T.J. Bergin (ed.). Zool. Parks Board of N.S.W., Sydney.

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